

Work Order ID 145279

Thursday, May 05, 2016 1:19:15 PM

145279

Item ID: D119-796-241

Revision ID:

Accept

N900040100

Setup Start

NS1

Item Name: AFT Crosscube Installation without Step (no hardware)

Stop

NS2

Start Date: 5/16/2016

Start Qty: 1.00

1

Required Date: 5/20/2016

Req'd Qty: 1.00

1

Reference:

Cust Item ID:
Customer:

Approvals:

Process Plan:

MLS

Date:

MAY 05 2016

Tooling:

SPC (Y/N):

Date:

Date:

Run Start

NR1

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
D119-796-241	Revision Nbr								

110 Document Control

0.00

110

DC

Memo

0.00

Doc Control -USB or Paperwork

Photocopy bluefile and create labels as per PPP D119-796-241 chg 004

N/A MLS 16-09-15

120

120

Packaging

Packaging

0.00

Memo

0.00

Packaging

ML 16-08-02

130

130

CNC Bend 2

BENDING MACHINE - CROSSTUBES

0.46

Memo

1.85

CNC Alpha 160 Bender

Bend tube as per Dwg D119-796-241 using CNC bender program

ML 16-08-02

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only

QA Closed: _____ Date: _____

Work Order: _____ Part No.: _____ NCR No.: _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐				AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Water Jet ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coord. ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Large Fab ☐ Composite ☐ Supplier ☐				MRB (QSI042) Approval Engineering ☐ Quality ☐ Other ☐	
Date: _____ Step #: _____		QTY Effective: _____		Disposition							
Description Work Order Deviation											
One side bent narrow 0.315" below nominal Scrap. Too narrow. Too far off other half spec Pending re-bend to bring in under side to even tube (aim for -0.055)											
Completed By											
Lead hand / Supervisor Approval Verification											
QC / QA Coordinator Approval											
FAULT CATEGORY											
Root Cause		Pressure/Forced Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐				Temperature/Cure Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐					
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐				Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐					
Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐											
OTHER: _____											

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Approvals:

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Tooling:

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Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
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Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140

QC15- Crossstube Dimensional Check

0.00

140

QC

Memo

0.00

Quality Control

145

145

Crossstubes

Crossstubes

Memo

0.00

1- CUT TUBE AT HEIGHT ON FAI SHEET

2- VERIFY HEIGHT: 25.000

BY QC15 LEVEL INSPECTOR: JP

3- DEBURR CUT SURFACE

① 16-08-16

9

INS

16-08-16

Date:

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date:

Work Order update only

Work Order: 145279		Part No. 0119-796-241		NCR No.	
Date: 16/6/16		Step #: 130		QTY Effective: 1	
DISPOSITION		AGAINST DEPARTMENT/PROCESS		MRB (QS1042) Approval	
Suspected Unapproved		Cross tube		Engineering	
Rework		Small Fab		Quality	
Scrap		Finishing		Other	
Use-as-is		Composite			
Description Work Order Deviation		Disposition		Completed By	
Tube is bent narrow.		Acceptable		12 GP 16/8/16	
One width 39.65 (-0.29)		Unlikely to cure fit issue.		Lead hand / Supervisor Approval Verification	
Total width is 79.587 (-0.291)				QC / QA Coordinator Approval	
				DAS 9	
				9-89 16-08-16	
Root Cause		FAULT CATEGORY		Positioned Wrong	
Environment		Temperature/Cure		Outside Dimensions	
Design		Set-up		Over/Under tolerance	
Doc/Data		BOM/Route		Part Incorrect	
Equip/Tooling		Broken/Damage/Defect		Part Lost/Missing	
Handling/Pre		Inspection Incomplete/Unqualified		Part Moved	
Material		Contamination		Drawing	
Internal Transport		Countersink		Finish	
Tribal Knowledge		Cut Too Short		Misread	
LOA		Instructions Incomplete/Unclear		Turning Sequence	
Substation		Drill Holes			
Past Expiry Date		OTHER :			
Misidentified					
No Re-verification		Pressure/Forced		Power Loss/Surge	
Operator		Bending		Folio/Program	
Offset/Setup		Centre Not Concentric		Grain	
Supplier		Cracks		Weld	
Training		Crimp/Kink/Ripple/Wave		Wrong Stock Pulled	
Use for Testing		Cuffs		Out of Sequence	
Poor Information		Crushing		Off-set	
Rushing		Heat Treat		Mislabeled	
Product Improvement		Wave/Twist in Tube		Fit/Function	
Process Improvement		Marks/Chatter		Misaligned/off center	
Manufacturing Process					
Past Due					

Work Order ID 145279

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AFT Crosstube Installation without Step (no hardware)

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Start Date: 5/16/2016

Start Qty: 1.00

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NS2

Required Date: 5/20/2016

Req'd Qty: 1.00

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Reference:

Cust Item ID:

Customer:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool #

Plan Code Accept Qty Reject Qty Reject Number Insp. Stamp

150

150

Crosstubes

Crosstubes

Memo

0.74

***** ENSURE PROPER JIG POSITIONING *****

1-DRILL TUBE AS PER DWG USING DT _____

2-DRILL RIVET HOLES USING DT8787 FWD

3-DEBURR AND CSINK RIVET HOLES AS PER DWG

4-FLIP TUBE, REPEAT STEP 2 AND 3

5-SCRIBE PART# AND BATCH# USING VIBRATING STYLUS ON INSIDE OF CUFF AS PER DWG D119-796-141

6-INSPECT AND REMOVE ALL MARKS FROM TUBE WITHIN LIMITS ON DWG D119-796-141

160

160

Hand Finishing

Crosstubes

Memo

0.00

IMMEDIATELY AFTER GRINDING

1-PRESSURE WASH X-TUBE INSIDE AND OUT

2-ALODINE AND ACID ETCH X-TUBE INSIDE AND OUT AS PER Q51005.

PD 16-08-18

PD 16-08-17

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION ☐ Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other	AGAINST DEPARTMENT/PROCESS	QTY Effective : _____ Disposition	MRB (QS1042) Approval																																																																																				
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Work Order ID 145279

Thursday, May 05, 2016 1:19:15 PM

145279

Item ID: D119-796-241

Accept

Revision ID:

N900040100

Setup Start

NS1

Item Name: AFT Crossstube Installation without Step (no hardware)

Stop

NS2

Start Date: 5/16/2016

Start Qty: 1.00

Required Date: 5/20/2016

Req'd Qty: 1.00

Reference:

Cust Item ID:
Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

170

QC7-Inspect Chemical Conversion Coat

0.00

17N

QC

Memo

0.00

Quality Control

AUG 18 2016

175

175

QC

QC5-Inspect part completeness to step on W/O

0.00

Memo

0.00

Quality Control

AUG 18 2016

180

18N

Outsource2

Outsource process - NDT per QSI038 4.1

0.00

Memo

120.00

Outsource process - NDT

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Liquid Penetrant Inspection as per QSI 0380r
Issue P/O: 33354 LPI as per ASTM 1417
Level 2 Attach copy of NDT results to work order

AUG 19 2016

DAS 13 9-89

DAS 38 9-89

DAS 38 9-89

DQA:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐	AGAINST DEPARTMENT/PROCESS	
Date: _____ Step #: _____ QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition
			Completed By
			Lead hand / Supervisor Approval Verification
			QC / QA Coordinator Approval

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Mistread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
		OTHER : _____									

Work Order ID 145279

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Revision ID:

Item Name: AFT Crossrube Installation without Step (no hardware)

Start Date: 5/16/2016

Start Qty: 1.00

Required Date: 5/20/2016

Req'd Qty: 1.00

Reference:

Accept

N9000040100

Setup Start

NS1

Stop

NS2

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

QC:

Date:

SPC (Y/N):

Date:

Stop

NR1

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

Packaging

Packaging

Memo

Ensure copy of NDT results attached to work order.

SEP 19 2016

13

200

200

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.02

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Inspect for damage & ensure results are as per Dwg D119-796-241

16/07/12

9-89

16

DAS

DQA:

Date: _____

QA Closed:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATEWork Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐		AGAINST DEPARTMENT/PROCESS		MRB (QS1042) Approval	
Date: _____		Step #: _____		QTY Effective: _____			
Description Work Order Deviation		Disposition					
Completed By		Lead hand / Supervisor Approval Verification					
QC / QA Coordinator Approval		QC / QA Coordinator Approval					

Root Cause										FAULT CATEGORY																					
☐	Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐	Outside Dimensions	☐	Over/Under tolerance	☐	Part Incorrect	☐	Part Lost/Missing	☐	Part Moved	☐	Drawing	☐	Finish	☐	Misread	☐	Turning Sequence		
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Qty

Reject
Qty

Reject
Number

Insp.
Stamp

230

230

SprayPaint

0.00

Memo

0.29

Spray Painting

***VERIFY BY DAS 41 BATCH # TO MATCH W/O

***VERIFY BY 9-89 PART # TO MATCH W/O

MASK SCRIBE B# & P# AND VERIFY

1- Prime Inside of tube.

2- Install nut plates as per dwg (D2873-043)

3- Mask cuffs per note#2.

4- Prime exterior of tube per QSI005.

Primer Batch: 135172

Start Time: 100

Finish Time: 200

16-9-6

41

9-89

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Revision ID:

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Setup Start

N.S1

Item Name: AFT Crossube Installation without Step (no hardware)

Stop

N.S2

Start Date: 5/16/2016

Start Qty: 1.00

1

Cust Item ID:

Required Date: 5/20/2016

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1

Customer:

Reference:

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Date:

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Date:

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Sequence ID/
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Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

240

QC14-Inspect Spray Paint

0.00

240

QC

Memo

0.00

Quality Control

***VERIFY BY S BATCH # TO MATCH W/O
***VERIFY BY 245279
W/O ? PART # TO MATCH ?

16
9-89
16/5/12

DQA:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐		AGAINST DEPARTMENT/PROCESS		MRB (QS1042) Approval ☐	
Date : _____		Step #: _____		QTY Effective : _____			
Description Work Order Deviation				Disposition			
Completed By				Lead hand / Supervisor Approval Verification			
QC / QA Coordinator Approval				MRB (QS1042) Approval			

Root Cause		FAULT CATEGORY									
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐		☐		☐		☐		☐
Misidentified	☐	Past Due	☐	OTHER : ☐							

Work Order ID 145279

Thursday, May 05, 2016 1:19:15 PM

145279

Item ID: D119-796-241

Accept

Revision ID:

N900040100

Setup Start

NS1

Item Name: AFT Crossube Installation without Step (no hardware)

Stop

NS2

Start Date: 5/16/2016

1

Cust Item ID:

Required Date: 5/20/2016

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

242

242

Crossubes

Memo

1.58

Assemble as per dwg D119-796-241 and QSI

1- Abrade mating surfaces with Scotch Brite 7447 and clean with Dupont 4105s or equivalent as per dwg.

2- Install D5152-043 with proseal 890 on concave surface, 0.100" MIN thick as per dwg using DT10112 (identified right and left)

MAINTAIN CLAMPING PRESSURE ON FOR MIN 72HRS**

Proseal Batch: 135390

EXP: 12/16

PROSEAL CURE TIME 72 HOURS:

Start: 16-9-7

Finish: 16-9-10

3- Install center support without boning.

4- Install Damper support and contact pads using proseal 890 per dwg and clamp in position.

Proseal Batch: 135390

EXP: 12/16

PROSEAL CURE TIME 72 HOURS:

Start: 16-9-7

Finish: 16-9-10

DAS
41
9-89
16-9-7

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS															
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐		Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐		Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐											
NCR No. _____		Suspected Unapproved ☐		Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐															
Date: _____		Step #: _____		QTY Effective: _____				MRB (QS1042) Approval											
Description Work Order Deviation				Disposition															
										Completed By									
										Lead hand / Supervisor Approval Verification									
										QC / QA Coordinator Approval									
Root Cause				FAULT CATEGORY															
☐ Environment				☐ Pressure/Forced				☐ Temperature/Cure				☐ Power Loss/Surge				☐ Positioned Wrong			
☐ Design				☐ Bending				☐ Set-up				☐ Folio/Program				☐ Outside Dimensions			
☐ Doc/Data				☐ Centre Not Concentric				☐ BOM/Route				☐ Grain				☐ Over/Under tolerance			
☐ Equip/Tooling				☐ Cracks				☐ Broken/Damage/Defect				☐ Weld				☐ Part Incorrect			
☐ Handling/Pre				☐ Crimp/Kink/Ripple/Wave				☐ Inspection Incomplete/Unqualified				☐ Wrong Stock Pulled				☐ Part Lost/Missing			
☐ Material				☐ Cuffs				☐ Contamination				☐ Out of Sequence				☐ Part Moved			
☐ Internal Transport				☐ Crushing				☐ Countersink				☐ Off-set				☐ Drawing			
☐ Tribal Knowledge				☐ Heat Treat				☐ Cut Too Short				☐ Mislabeled				☐ Finish			
☐ LOA				☐ Wave/Twist in Tube				☐ Instructions Incomplete/Unclear				☐ Fit/Function				☐ Misread			
☐ Substation				☐ Marks/Chatter				☐ Drill Holes				☐ Misaligned/off center				☐ Turning Sequence			
☐ Past Expiry Date																			
☐ Misidentified																			
				OTHER: ☐															

Work Order ID 145279

Thursday, May 05, 2016 1:19:15 PM

145279

Item ID: D119-796-241

Revision ID:

Accept

N900040100

Setup Start

NS1

Item Name: AFT Crossube Installation without Step (no hardware)

Stop

NS2

Start Date: 5/16/2016

1

Required Date: 5/20/2016

1

Reference:

1

Cust Item ID:
Customer:

Approvals: Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

244

QC5- Inspect part completeness to step on W/O

0.00

244

Memo

0.02

QC

16
9-89

Quality Control

***VERIFY BY S BATCH # TO MATCH W/O
145279
***VERIFY BY Q PART # TO MATCH
W/O

DQA:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION ☐ Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other		AGAINST DEPARTMENT/PROCESS		MRB (QS1042) Approval	
Date : _____		Step #: _____		QTY Effective : _____			
Description Work Order Deviation		Disposition					
Completed By		Lead hand / Supervisor Approval Verification					
QC / QA Coordinator Approval		Fault Category					

Root Cause		FAULT CATEGORY									
Environment	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/ Surge	☐	Positioned Wrong	☐	Outside Dimensions	☐
Design	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Over/Under tolerance	☐	Part Incorrect	☐
Doc/Data	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Part Lost/Missing	☐	Part Moved	☐
Equip/Tooling	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Drawing	☐	Finish	☐
Handling/Pre	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Misread	☐	Turning Sequence	☐
Material	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐				
Internal Transport	☐	Crushing	☐	Countersink	☐	Off-set	☐				
Tribal Knowledge	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐				
LOA	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐				
Substation	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐				
Past Expiry Date	☐										
Misidentified	☐										
		OTHER : ☐									

Work Order ID 145279

Thursday, May 05, 2016 1:19:15 PM

145279

Item ID: D119-796-241

Accept

Revision ID:

N900040100

Setup Start

NS1

Item Name: AFT Crosstube Installation without Step (no hardware)

Stop

NS2

Start Date: 5/16/2016

1

Required Date: 5/20/2016

1

Req'd Qty: 1.00

Cust Item ID:
Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (V/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

246 Spray Painting per QSI005 4.2

0.00

246
Spray Paint

Memo

0.43

Spray Painting

DAS
41
9:89
12-09-16

***VERIFY BY MS BATCH # TO MATCH W/O

***VERIFY BY MS PART # TO MATCH W/O

MASK SCRIBE B# & P# AND VERIFY

1- Remove all non-fixed hardware and clean any excess proseal.

2- Scuff tube with Scotch Brite 7447.

3- Mask cuff per note#2.

4- Prime as per dwg and QSI005

Primer Batch: 135112

Start Time: 10:00

Finish Time: 11:00

5- Apply matte clear as per dwg and QSI005

Clear Batch: 135207

Start Time: 3:00

Finish Time: 4:00

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS									
		Suspected Unapproved		Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other			
Date : _____		Step # : _____		QTY Effective : _____		MRB (QS1042) Approval							
Description Work Order Deviation				Disposition									
												Completed By	
												Lead hand / Supervisor Approval Verification	
												QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong								
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions								
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance								
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect								
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing								
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved								
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing								
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish								
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread								
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence								
Past Expiry Date	Manufacturing Process												
Misidentified	Past Due												
OTHER : _____													

Work Order ID 145279

Thursday, May 05, 2016 1:19:15 PM

145279

Item ID: D119-796-241

Accept

Revision ID:

Item Name: AFT Crosstube Installation without Step (no hardware)

N900040100

Setup Start

NS1

Start Date: 5/16/2016

1

Required Date: 5/20/2016

1

Reference:

Cust Item ID:

Customer:

Stop *NS2*

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code

Accept Qty Reject Qty Reject Number Insp. Stamp

248 Spray Painting per QSI005 4.2

0.00

248
Spray Paint

Memo

***VERIFY BY  BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

MASK SCRIBE B# & P# AND VERIFY

1- Mask underside of tube as per dwg. Mask cuff per note#2.

2- Scuff tube with Scotch Brite 7447

3- Paint outside of cross tube

Paint Batch: 135302

Start Time: 1:00

Finish Time: 8:00


13-09-16

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS															
Part No. _____		Rework Scrap Use-as-is		Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other									
NCR No. _____		Suspected Unapproved		Large Fab		Finishing		Composite		Supplier									
Date : _____		Step #:		QTY Effective :		MRB (QS1042) Approval													
Description Work Order Deviation				Disposition															
												Completed By							
												Lead hand / Supervisor Approval Verification							
												QC / QA Coordinator Approval							
Root Cause				FAULT CATEGORY															
Environment				Pressure/Forced				Temperature/Cure				Power Loss/Surge				Positioned Wrong			
Design				Bending				Set-up				Folio/Program				Outside Dimensions			
Doc/Data				Centre Not Concentric				BOM/Route				Grain				Over/Under Tolerance			
Equip/Tooling				Cracks				Broken/Damage/Defect				Weld				Part Incorrect			
Handling/Pre				Crimp/Kink/Ripple/Wave				Inspection Incomplete/Unqualified				Wrong Stock Pulled				Part Lost/Missing			
Material				Cuffs				Contamination				Out of Sequence				Part Moved			
Internal Transport				Crushing				Countersink				Off-set				Drawing			
Tribal Knowledge				Heat Treat				Cut Too Short				Mislabeled				Finish			
LOA				Wave/Twist in Tube				Instructions Incomplete/Unclear				Fit/Function				Misread			
Substation				Marks/Chatter				Drill Holes				Misaligned/off center				Turning Sequence			
Past Expiry Date																			
Misidentified				OTHER :															

Work Order ID 145279

Thursday, May 05, 2016 1:19:15 PM

145279

Page 12

Item ID: D119-796-241

Accept

Revision ID:

N900040100

Setup Start

AFT Crossube Installation without Step (no hardware)

Item Name:

NS1

Stop

Start Date: 5/16/2016

Start Qty: 1.00

1

NS2

Required Date: 5/20/2016

Req'd Qty: 1.00

1

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

NR1

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

250

QC14- Inspect Spray Paint

0.00

Crosstubes

250

QC

Memo

***VERIFY BY

98

BATCH # TO MATCH W/O

***VERIFY BY

98

PART # TO MATCH

W/O 145279

SEP 15 2016

252

252

Crosstubes

Crosstubes

0.00

0.00

Memo

1- Re-install non fixed hardware per dwg

Torque clamps on damper and contact pad to 80-100 IN-LBS.

2- Apply a fillet-seal of proscal 890 around damper supports and contact pads.

Allow proscal to dry before inspecting.

Proscal 890

Batch: 135390

EXP: 12/16

PROSEAL CURE TIME 72 HOURS:

Start: 11/14/14

Finish:

DAS

41

9-89

16-9-14



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION				AGAINST DEPARTMENT/PROCESS																					
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐				Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐		Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐		Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐															
NCR No. _____		Suspected Unapproved ☐				QTY Effective : _____						MRB (QS1042) Approval															
Date : _____		Step #: _____		Disposition																							
Description Work Order Deviation																											
Work Order Deviation Description														Completed By													
														Lead hand / Supervisor Approval Verification													
														QC / QA Coordinator Approval													
Root Cause														FAULT CATEGORY													
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐		Power Loss/Surge ☐		Positioned Wrong ☐		Outside Dimensions ☐		Over/Under tolerance ☐													
Design ☐		Operator ☐		Bending ☐		Set-up ☐		Folio/Program ☐		Outside Dimensions ☐		Over/Under tolerance ☐		Part Incorrect ☐													
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐		Grain ☐		Part Lost/Missing ☐		Part Moved ☐		Drawing ☐													
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐		Weld ☐		Wrong Stock Pulled ☐		Off-set ☐		Finish ☐													
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐		Wrong Stock Pulled ☐		Out of Sequence ☐		Misread ☐		Turning Sequence ☐													
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐		Wrong Stock Pulled ☐		Off-set ☐		Misread ☐		Turning Sequence ☐													
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐		Wrong Stock Pulled ☐		Off-set ☐		Misread ☐		Turning Sequence ☐													
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐		Wrong Stock Pulled ☐		Off-set ☐		Misread ☐		Turning Sequence ☐													
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐		Wrong Stock Pulled ☐		Off-set ☐		Misread ☐		Turning Sequence ☐													
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐		Wrong Stock Pulled ☐		Off-set ☐		Misread ☐		Turning Sequence ☐													
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____				Wrong Stock Pulled ☐		Off-set ☐		Misread ☐		Turning Sequence ☐													
Misidentified ☐		Past Due ☐						Wrong Stock Pulled ☐		Off-set ☐		Misread ☐		Turning Sequence ☐													

Work Order ID 145279

Thursday, May 05, 2016 1:19:15 PM

145279

Item ID: D119-796-241

Accept

Revision ID:

N900040100

Setup Start

Item Name: AFT Crosstube Installation without Step (no hardware)

NS1

Start Date: 5/16/2016

Start Qty: 1.00

1

Stop

NS2

Required Date: 5/20/2016

Req'd Qty: 1.00

1

Cust Item ID:
Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

NR1
NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool #

Plan
Code

Accept Qty

Reject Qty

Reject
Number

Insp.
Stamp

Das

38

9-89

260

QC5- Inspect part completeness to step on W/O

0.00

260
QC

Memo

0.02

***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED AS
PER DWG.***

1- ATTACH A RED TAG TO CENTER SUPPORT THAT READS

"CENTER SUPPORT NOT FIXED"

THEN DATE AND STAMP IT.

***VERIFY BY

145279

BATCH # TO MATCH W/O

***VERIFY BY

145279

PART # TO MATCH
W/O

290

290

Packaging

Packaging

Memo

0.00

Identify and pack for shipping as per PPP D119-796-241

On w/o

149583

DQA: _____ Date: _____

Date:

QA Closed: _____ Date: _____

Work Order update only

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Water Jet ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coord. ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Large Fab ☐ Composite ☐ Supplier ☐				Engineering ☐ Quality ☐ Other ☐			
Date : _____		Step #: _____		QTY Effective : _____		MRB (QS1042) Approval					
Description Work Order Deviation				Disposition							
Completed By				Lead hand / Supervisor Approval Verification							
								QC / QA Coordinator Approval			

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
		OTHER :									

Work Order ID 145279

Thursday, May 05, 2016 1:19:15 PM

145279

Page 14

Item ID: D119-796-241

Accept

Revision ID:

N900040100

Setup Start

NS1

Item Name: AFT CrossTube Installation without Step (no hardware)

Stop

NS2

Start Date: 5/16/2016

Start Qty: 1.00

1

Required Date: 5/20/2016

Req'd Qty: 1.00

1

Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

300 QC21 - Final Inspection - Work Order Release

0.00

300

Memo

0.10

QC

MS 1605-15

DAS SEP 15 2016 21 2-03

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐		AGAINST DEPARTMENT/PROCESS		MRB (QS1042) Approval	
Date : _____		Step #: _____		QTY Effective : _____			
Description Work Order Deviation		Disposition					
Completed By		Lead hand / Supervisor Approval Verification					
QC / QA Coordinator Approval		Fault Category					

Root Cause		FAULT CATEGORY									
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____							
Misidentified	☐	Past Due	☐								

Picklist Print

Thursday, May 05, 2016 1:19:22 PM

Work Order ID: 145279

Parent Item: D119-796-241

Parent Item Name: AFT Crosscube Installation without Step (no hardware)

145279

D119-796-241

Start Date: 5/16/2016

Required Date: 5/26/2016

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP REV:A 14.09.03 NEW ISSUE DD VERF:JLM
 REV:B 14.10.15 AS PER REV.B DD VERF:JLM
 14.11.19 AS PER REV.C DD VERF:JLM
 AS PER REV.D 14.12.12
 AS PER REV.DD VERF:JLM
 REV F JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D119-796-241TRN
 D119-796-241TRN
 Crosscube Turning Detail
 Manufactured No
 B146576
 1
 16-08-02

D2873-043
 D2873-043
 Nut Plate Assembly
 Manufactured No
 Location LG014
 137006
 137007
 Loc Qty 2
 Loc Code
 50.0000
 4
 DAS
 41
 9-89
 16-9-6

D5122-1
 D5122-1
 Center Support, Upper
 Manufactured No
 Location LG053
 140075
 141436
 Loc Qty 50
 10
 40
 Loc Code
 15.0000
 1
 DAS
 41
 9-89
 16-9-7

Location LG053
 138940
 143431
 Loc Qty 15
 1
 14
 Loc Code
 1

DQA:

Date: _____

QA Closed:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

Work Order: _____		AGAINST DEPARTMENT/PROCESS		Engineering ☐	
Part No. _____		Cross tube ☐ Water Jet ☐		Quality ☐	
NCR No. _____		Small Fab ☐ Prod. Eng. Coord. ☐		Other ☐	
Date: _____		Thermoforming ☐ Rec/Store/Packaging ☐			
Step #: _____		Composite ☐ Supplier ☐		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
QTY Effective: _____					
Completed By					
Lead hand / Supervisor Approval Verification					
QC / QA Coordinator Approval					
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐				
Misidentified ☐	Past Due ☐	OTHER: _____			

Picklist Print

Thursday, May 05, 2016 1:19:22 PM

Work Order ID: 145279

Parent Item: D119-796-241

Parent Item Name: AFT Crossube Installation without Step (no hardware)

14.5279
D119-796-241

Start Date: 5/16/2016
Start Qty: 1.00
Required Date: 5/20/2016
Required Qty: 1.00

D5123-1
Manufactured No

D5123-1
Clamp Cushion

**

6

DAS
41
9-89 16-9-7

Location Loc Qty Loc Code
LG054 62
141296 2
144638 60
prelim 2
115257 2

144638

6

D5123-5
Manufactured No

D5123-5
Clamp Cushion

**

2

DAS
41
9-89 16-9-7

Location Loc Qty Loc Code
LG054 48
141307 8
144625 40

144625

2

D5134-041
Manufactured No

D5134-041
Damper Support Assembly, LH

**

1

DAS
41
9-89 16-9-7

Location Loc Qty Loc Code
LG54 8
138930 8

143421

1

D5134-042
Manufactured No

D5134-042
Damper Support Assembly, RH

**

1

DAS
41
9-89 16-9-7

Location Loc Qty Loc Code
LG054 14
126751 1
138989 7
143447 6

146887

1

Thursday, May 05, 2016 1:19:22 PM

Shop Packet Print



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION				AGAINST DEPARTMENT/PROCESS																							
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐				Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐																							
NCR No. _____		Suspected Unapproved ☐				Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐																							
Date: _____		Step #: _____		QTY Effective: _____		MRB (QS1042) Approval																							
Description Work Order Deviation						Disposition																							
												Completed By																	
												Lead hand / Supervisor Approval Verification																	
												QC / QA Coordinator Approval																	
Root Cause						FAULT CATEGORY																							
Environment ☐						Pressure/Forced ☐						Temperature/Cure ☐						Power Loss/Surge ☐						Positioned Wrong ☐					
Design ☐						Bending ☐						Set-up ☐						Folio/Program ☐						Outside Dimensions ☐					
Doc/Data ☐						Centre Not Concentric ☐						BOM/Route ☐						Grain ☐						Over/Under tolerance ☐					
Equip/Tooling ☐						Cracks ☐						Broken/Damage/Defect ☐						Weld ☐						Part Incorrect ☐					
Handling/Pre ☐						Crimp/Kink/Ripple/Wave ☐						Inspection Incomplete/Unqualified ☐						Wrong Stock Pulled ☐						Part Lost/Missing ☐					
Material ☐						Cuffs ☐						Contamination ☐						Out of Sequence ☐						Part Moved ☐					
Internal Transport ☐						Crushing ☐						Countersink ☐						Off-set ☐						Drawing ☐					
Tribal Knowledge ☐						Heat Treat ☐						Cut Too Short ☐						Mislabeled ☐						Finish ☐					
LOA ☐						Wave/Twist in Tube ☐						Instructions Incomplete/Unclear ☐						Fit/Function ☐						Misread ☐					
Substation ☐						Marks/Chatter ☐						Drill Holes ☐						Misaligned/off center ☐						Turning Sequence ☐					
Past Expiry Date ☐						OTHER: ☐																							
Misidentified ☐																													



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS															
Part No. _____		Rework Scrap Use-as-is Suspected Unapproved		Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other									
NCR No. _____																			
Date: _____		Step #: _____		QTY Effective: _____		MRB (QSI042) Approval													
Description Work Order Deviation				Disposition															
												Completed By							
												Lead hand / Supervisor Approval Verification							
												QC / QA Coordinator Approval							
Root Cause				FAULT CATEGORY															
Environment Design Doc/Data Equip/Tooling Handling/Pre Material Internal Transport Tribal Knowledge LOA Substation Past Expiry Date Misidentified				Pressure/Forced Bending Centre Not Concentric Cracks Crimp/Kink/Ripple/Wave Cuffs Crushing Heat Treat Wave/Twist in Tube Marks/Chatter				Temperature/Cure Set-up BOM/Route Broken/Damage/Defect Inspection Incomplete/Unqualified Contamination Countersink Cut Too Short Instructions Incomplete/Unclear Drill Holes				Power Loss/Surge Folio/Program Grain Weld Wrong Stock Pulled Out of Sequence Off-set Mislabeled Fit/Function Misaligned/off center				Positioned Wrong Outside Dimensions Over/Under tolerance Part Incorrect Part Lost/Missing Part Moved Drawing Finish Misread Turning Sequence			
OTHER : _____																			

Picklist Print

Thursday, May 05, 2016 1:19:23 PM

Work Order ID: 145279

145279

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 5/16/2016

Required Date: 5/20/2016

Start Qty: 1.00

Required Qty: 1.00

MS21920-25

Purchased

No

Each

32.0000

6

DAS

41

MS21920-25

Clamp

Location

135538

Loc Qty

6

Loc Code

9-89

16-9-7

FG

120920

10

LG050

m134588

14

LG057

m134507

8

Purchased

No

Each

45.0000

2

DAS

41

MS21920-28

Clamp

Location

135008

Loc Qty

2

Loc Code

9-89

16-9-14

FG

105884

1

LG051

M132169

1

LG057

M134130

43

M134514

2

M134590

3

38



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____

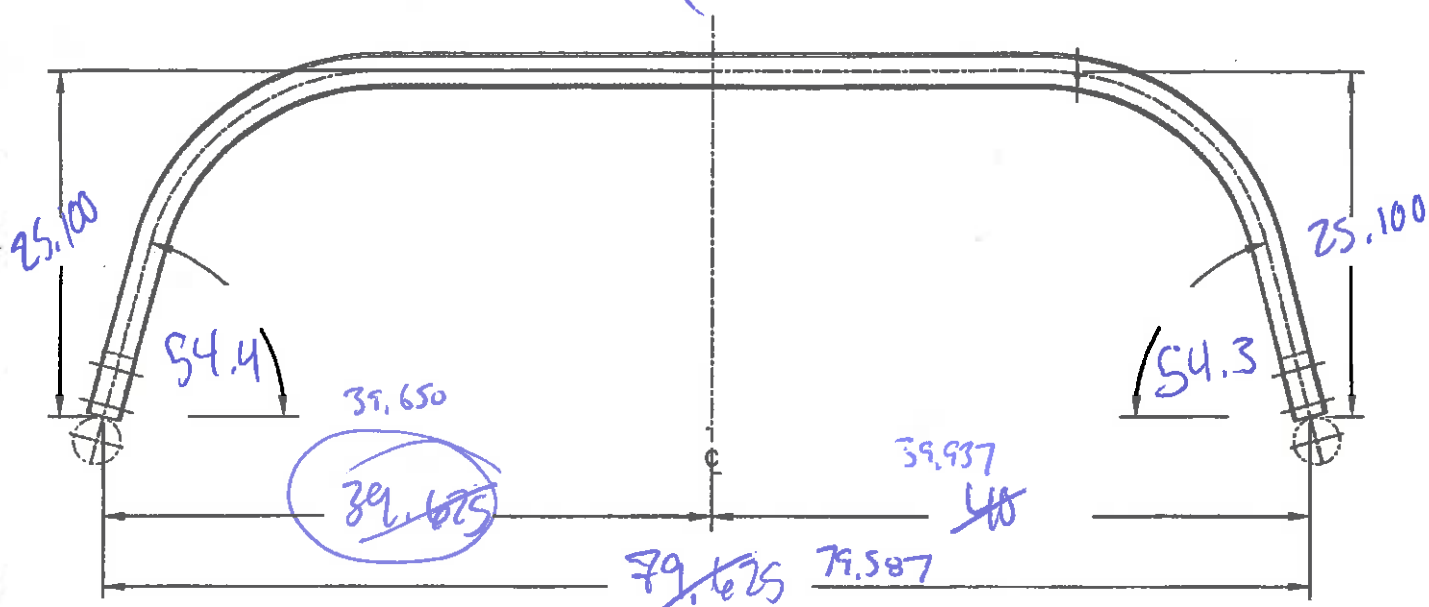
Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS							
Date: _____		Step #: _____		QTY Effective: _____		MRB (QS1042) Approval					
Description Work Order Deviation		Disposition									
Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval											
Root Cause		FAULT CATEGORY									
Environment		Pressure/Forced		Temperature/Cure		Power Loss/Surge		Positioned Wrong			
Design		Bending		Set-up		Folio/Program		Outside Dimensions			
Doc/Data		Centre Not Concentric		BOM/Route		Grain		Over/Under tolerance			
Equip/Tooling		Cracks		Broken/Damage/Defect		Weld		Part Incorrect			
Handling/Pre		Crimp/Kink/Ripple/Wave		Inspection Incomplete/Unqualified		Wrong Stock Pulled		Part Lost/Missing			
Material		Cuffs		Contamination		Out of Sequence		Part Moved			
Internal Transport		Crushing		Countersink		Off-set		Drawing			
Tribal Knowledge		Heat Treat		Cut Too Short		Mislabeled		Finish			
LOA		Wave/Twist in Tube		Instructions Incomplete/Unclear		Fit/Function		Misread			
Substation		Marks/Chatter		Drill Holes		Misaligned/off center		Turning Sequence			
Past Expiry Date		OTHER: _____									
Misidentified											

DART AEROSPACE LTD		Work Order: 145 279
Description: Crosstube Aft, with Step		Part Number: D119-796-241
Inspection Dwg: D119-796-241	Rev: I	Page 1 of 1

Required Dimension	Min	Max
Height	24.840	25.100
1/2 Span	39.810	40.070
Angle	54°	57°
Total Span	79.620	80.140
Bending Passes	8	--
Crushing	--	8.5%

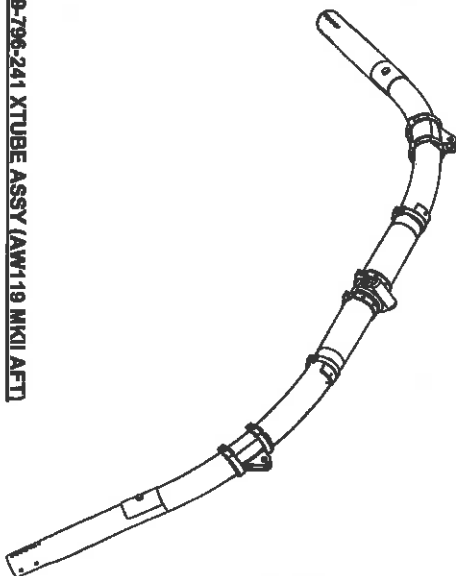


	Side A	Side B
Bending Passes	15	11
Crushing	6.6%	7.1%
Comments		

QC15 Inspection	DAS
Date	8 9.00 16.09.16

Rev	Date	Change	Revised by	Approved
A	15.04.14	New Issue	KJ	
B	15.11.12	Min angle revised	KJ	
C	15.12.15	Dwg Rev updated	KJ	

D119-798-241 XTUBE ASSY (AW119 MKII AFT)



145279 MJS
160505

- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: APPLY MATTE CLEAR COAT PER OSI 005 4.2
MASK D6134-041-042 DAMPER SUPPORT ASSEMBLIES, D6136-1/2 CONTACT PADS AS WELL AS UNDERSIDE OF CROSSTUBE AS SHOWN (B4-2, HATCHED AREA).
PAINT OUTSIDE PER PART OSI 005 4.2 AFTER APPLYING CLEAR COAT
DO NOT APPLY FINISH (PAINT OR CLEAR COAT) TO CUFFS IN LOCATION SHOWN, MASK PRIOR TO FINISHING
 - 3) TOLERANCES: PER DART OSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: IDENTIFY USING PART NUMBER 'D119-798-241' AND BATCH NUMBER ON INSIDE OF CLIFF PER OSI 044 8.4
 - 7) WEIGHT: 28.28 lbs
 - 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM DEFECTS SUCH AS SCRATCHES, NICKS OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
 - 9) INSTALL D5122-1 CENTER SUPPORT HAND TIGHT ONLY. DO NOT TORQUE. INSTALL RED TAG TO INDICATE 'D6122-1 CENTER SUPPORT MUST BE BONDED PER IN-D119-798-241 PRIOR TO FLIGHT'
 - 10) PRIOR TO FINISHING, ABRASE MATING SURFACES OF D6136-1/2 AND SURFACE OF CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 41053 WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 880 ON THE INSIDE CONCAVE SURFACE OF THE D6136-1/2 CONTACT PADS AND INSTALL CLAMPS AND D5123-5 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 880 SEALANT HAS CURED FOR 72 HOURS.
 - 11) TORQUE MS21920 CLAMPS 80 - 100 IN.LB. ENSURE AT LEAST 1/2 THREADS SHOWING IN SAFETY. THE NUT HAS NOT BOTTOMED OUT AFTER TORQUING AND THE NUT IS FACING AFT.
 - 12) PRIOR TO FINISHING, POSITION AND INSTALL D5134-041-042 DAMPER SUPPORTS USING JIG DT10085. ABRASE MATING SURFACES OF THE D5134-041-042 DAMPER SUPPORTS AND CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 41053 WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 880 ON THE INSIDE CONCAVE SURFACE OF THE D5134-041-042. INSTALL MS21920-26 CLAMPS AND D5123-1 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 880 SEALANT HAS CURED FOR 72 HOURS.
 - 13) PRIOR TO FINISHING, ABRASE MATING SURFACES OF CROSSTUBE AND D6182-043 WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 41053 WASH 'N' WIPE DEGREASER. INSTALL D5182-043 WITH LAYER OF PROSEAL 880 ON INSIDE CONCAVE SURFACE, 0.100" MIN THK. LOCATE D5182-043 USING TOOL DT10112.

RELEASED
N 2015-11-04
BY 15-142

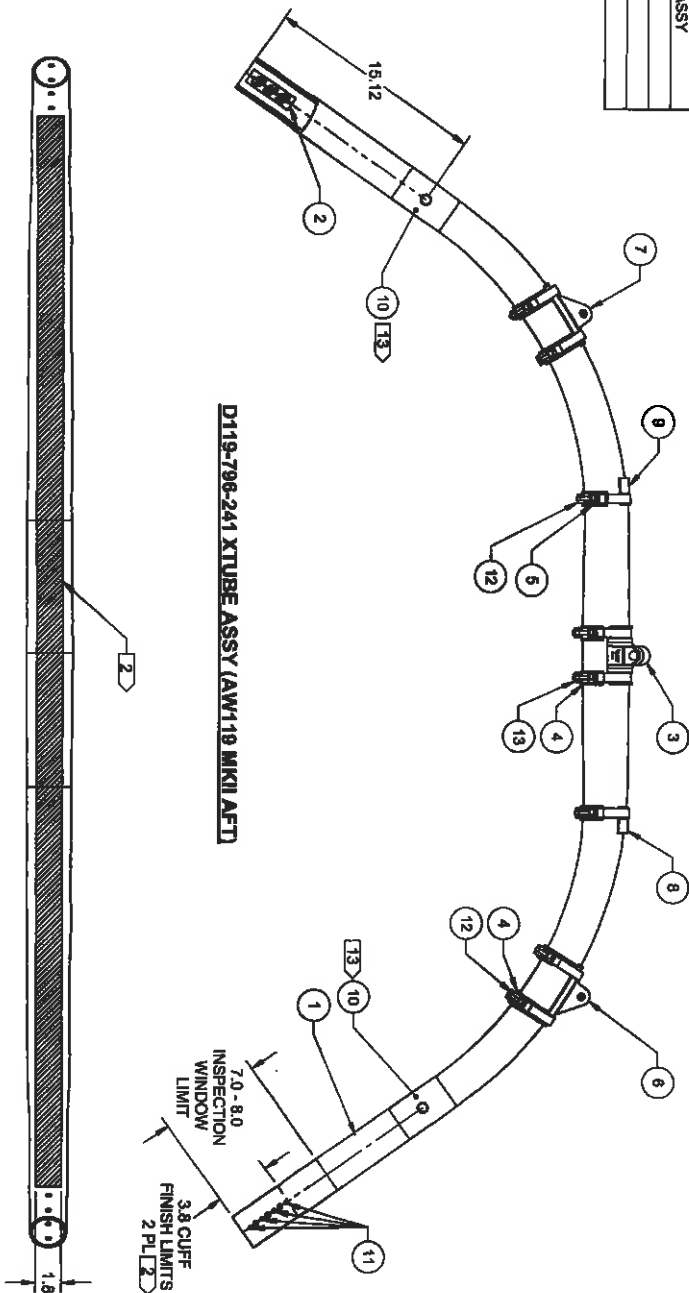
APPROVED

REV.	DESCRIPTION	BY	DATE
A	NEW ISSUE	AP	14.08.07
B	CONTRACT PADS ADDED UNDER D5136-1/2 CONTACT PADS. ADDED D5123-5 CLAMP CUSHIONS FOR LOCATING CLIFF HOLES. RE-CHECKED NOTES, REMOVED REDUNDANT INFORMATION.	AP	14.09.08
C	ORIENTATION OF D5122-1 CENTER SUPPORT WAS CORRECTED. D5123-5 ADDED UNDER D5136-1/2 CONTACT PADS. ADDED D5123-5 CLAMP CUSHIONS FOR LOCATING CLIFF HOLES. RE-CHECKED NOTES, REMOVED REDUNDANT INFORMATION.	AP	14.10.23
D	D5134-041-042 NOW INSTALLED ON PRIMER. NOTE 9 RE-WRITTEN, BONDING INSTRUCTIONS MOVED TO IN. SEE PREVIOUS REV FOR DETAIL 8.	AP	15.04.13
E	FINISHING ORDER ADJUSTED. UPDATE BEND D119-798-141 (DNG)	AP	15.04.24
F	REMOVED PRIMER/PAINT ON CUFFS, 2.518 WAS 2.300 (C4-5)	AP	15.02.03
G	D5134-043 WAS D5130-3, SCOTCH BRITE 7447 RED WAS 180 GRIT SANDPAPER	DB	15.01.15
H	ADD D5134-043 STEP POST (20) MOVED INSPECTION WINDOW DETAIL TO SHIT 1. MODIFIED NOTES ON SH 16.3	DB	14.11.25
I	C8912-447 NUTS WAS C8912-448 NUTS. PARTS 2.518 WAS 2.300 (C4-5). ADD INSPECTION WINDOW	AP	14.10.23

DESIGN	AP	DESCRIPTION	BY	DATE
DRAWN	AP	DART AEROSPACE LTD		
CHECKED	ALS	HAWKESBURY, ONTARIO, CANADA		
MG. APPR.	JLM	D119-798-241		
APPROVED	WM			
DE APPR.	DS			
DATE	15.10.13			

THE DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED ONLY FOR THE PURPOSES SPECIFIED IN THE DRAWING. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.

ITEM	QTY	P/N	DESCRIPTION
1	1	D119-796-241	XTUBE ASSY (AW119 MKII AFT)
2	4	D119-796-241BND	CROSS-TUBE, AFT
3	1	D2873-043	RADIUS BLOCK
4	1	D5122-1	CENTER SUPPORT
5	2	D5123-1	CLAMP CUSHION
6	1	D5123-5	CLAMP CUSHION
7	1	D5134-041	DAMPER SUPPORT ASSY, LH
8	1	D5134-042	DAMPER SUPPORT ASSY, RH
9	1	D5138-1	CONTACT PAD, LH
10	2	D5182-043	CONTACT PAD, RH
11	16	CR3212-4-07	AFT POST MOUNT ASSY
12	8	MS21920-25	RIVET, BLIND CSK
13	2	MS21920-28	CLAMP



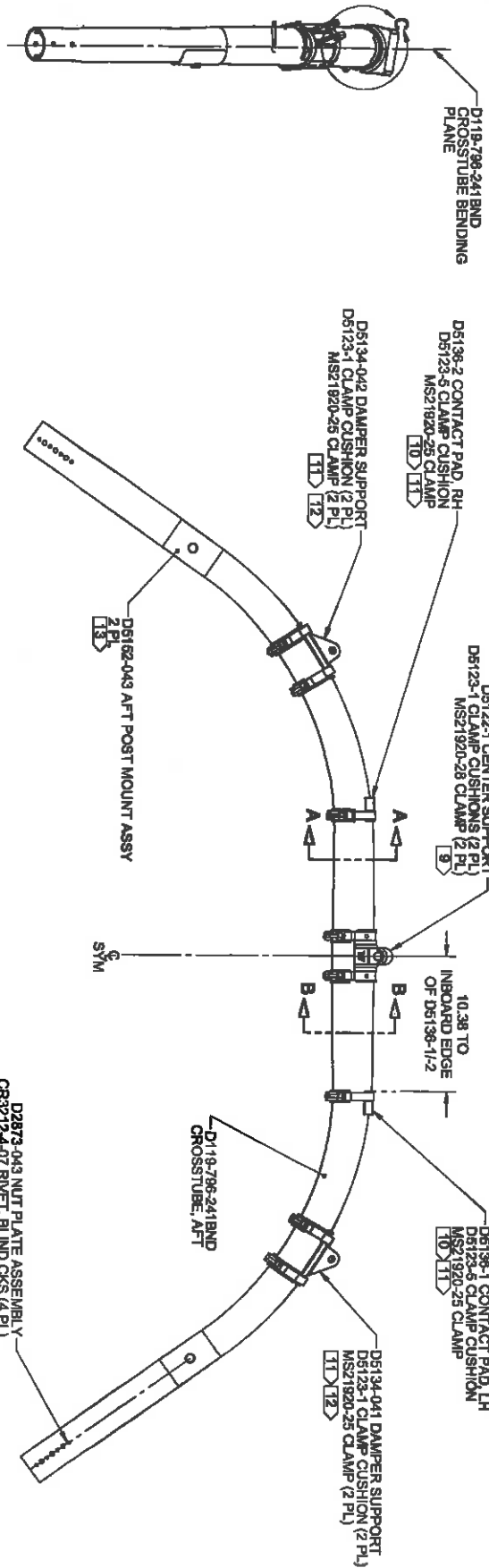
D119-796-241 XTUBE ASSY (AW119 MKII AFT)

RELEASED
2015-11-04

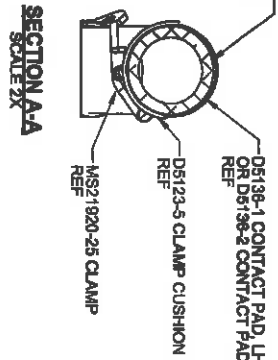
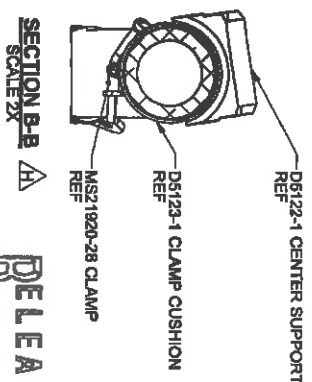
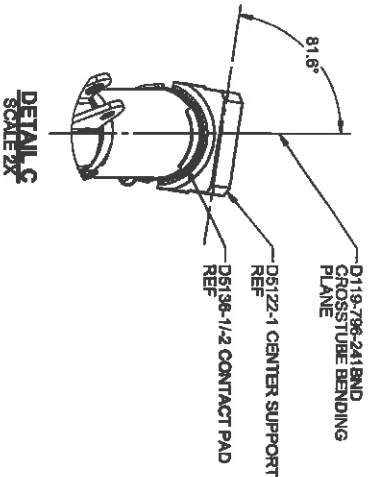
APPROVED

DESIGN	AP	DART AEROSPACE LTD
DRAWN	AP	HAWKSBURY, ONTARIO, CANADA
CHECKED	ALB	DRAWING NO.
MFG. APPR.	JLM	D119-796-241
APPROVED	WMA	SHEET 2 OF 7
DE APPR.	DES	SCALE
DATE	15.10.13	XTUBE ASSY (AW119 MKII AFT) INTS

CONTINGENT 0.50% BY DART AEROSPACE LTD
HAWKSBURY, ONTARIO, CANADA
REVISIONS: 1.00, 1.01, 1.02, 1.03, 1.04, 1.05, 1.06, 1.07, 1.08, 1.09, 1.10, 1.11, 1.12, 1.13, 1.14, 1.15, 1.16, 1.17, 1.18, 1.19, 1.20, 1.21, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27, 1.28, 1.29, 1.30, 1.31, 1.32, 1.33, 1.34, 1.35, 1.36, 1.37, 1.38, 1.39, 1.40, 1.41, 1.42, 1.43, 1.44, 1.45, 1.46, 1.47, 1.48, 1.49, 1.50, 1.51, 1.52, 1.53, 1.54, 1.55, 1.56, 1.57, 1.58, 1.59, 1.60, 1.61, 1.62, 1.63, 1.64, 1.65, 1.66, 1.67, 1.68, 1.69, 1.70, 1.71, 1.72, 1.73, 1.74, 1.75, 1.76, 1.77, 1.78, 1.79, 1.80, 1.81, 1.82, 1.83, 1.84, 1.85, 1.86, 1.87, 1.88, 1.89, 1.90, 1.91, 1.92, 1.93, 1.94, 1.95, 1.96, 1.97, 1.98, 1.99, 2.00, 2.01, 2.02, 2.03, 2.04, 2.05, 2.06, 2.07, 2.08, 2.09, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 2.20, 2.21, 2.22, 2.23, 2.24, 2.25, 2.26, 2.27, 2.28, 2.29, 2.30, 2.31, 2.32, 2.33, 2.34, 2.35, 2.36, 2.37, 2.38, 2.39, 2.40, 2.41, 2.42, 2.43, 2.44, 2.45, 2.46, 2.47, 2.48, 2.49, 2.50, 2.51, 2.52, 2.53, 2.54, 2.55, 2.56, 2.57, 2.58, 2.59, 2.60, 2.61, 2.62, 2.63, 2.64, 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D119-796-241 XTUBE ASSY (AW119 MKII AFT)

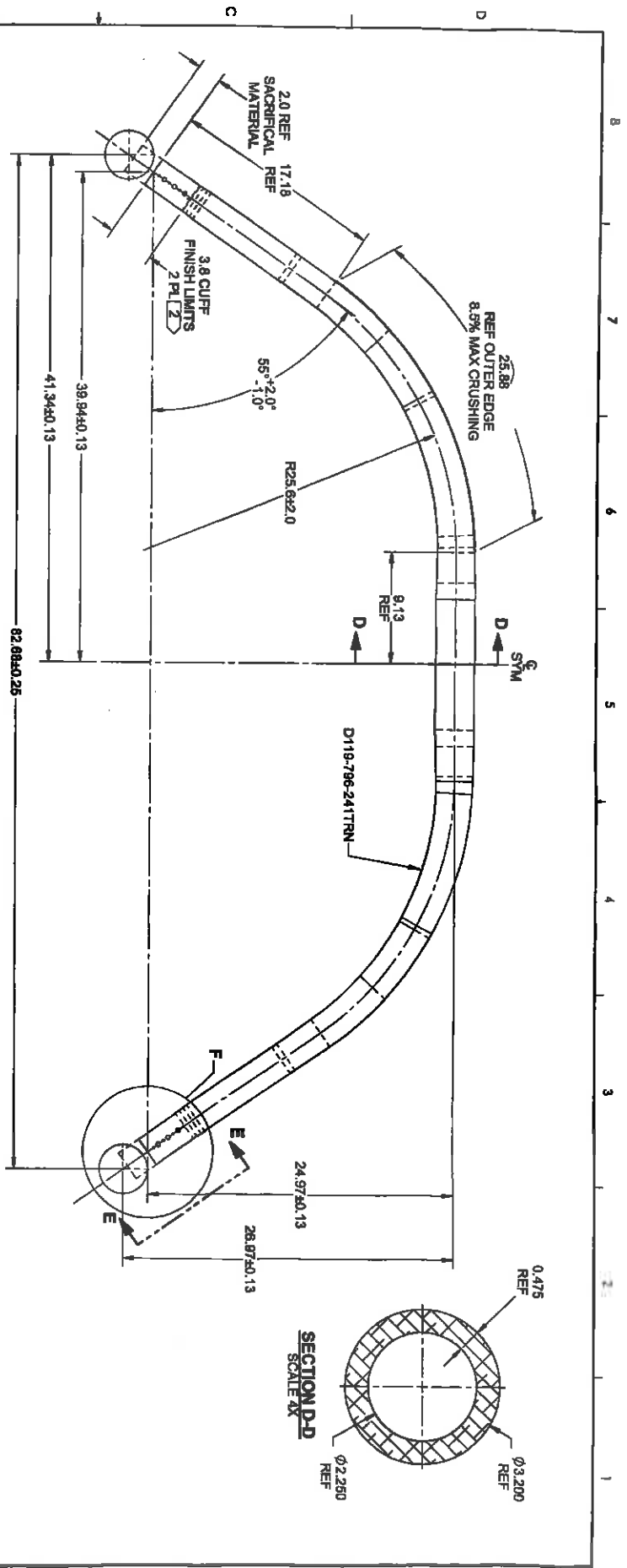


DESIGN	AP	AP	DART AEROSPACE LTD
DRAWN	AP	AP	HAINESBURY, ONTARIO, CANADA
CHECKED	AS	AS	REV. 1
MFG. APPR.	JLM	JLM	D119-796-241
APPROVED	WM	WM	SHEET 3 OF 7
DE APPR.	DS-4	DS-4	SCALE
DATE	16.10.13	16.10.13	NTS

RELEASED
N 205 -11- 04

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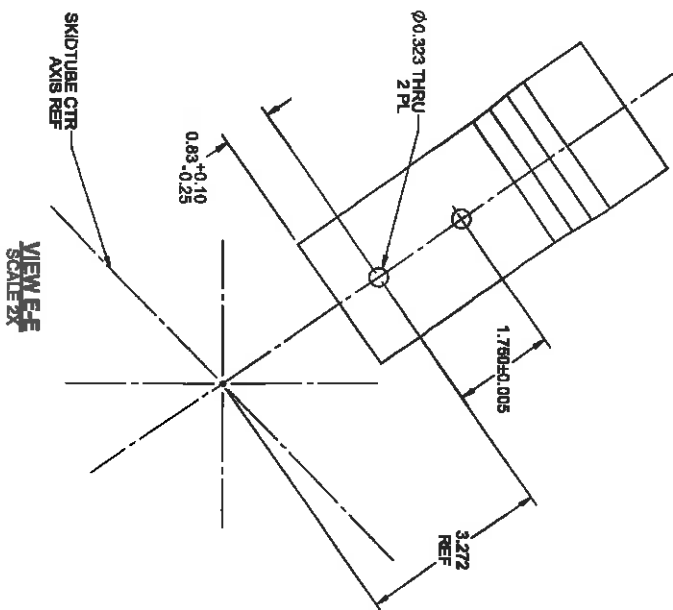
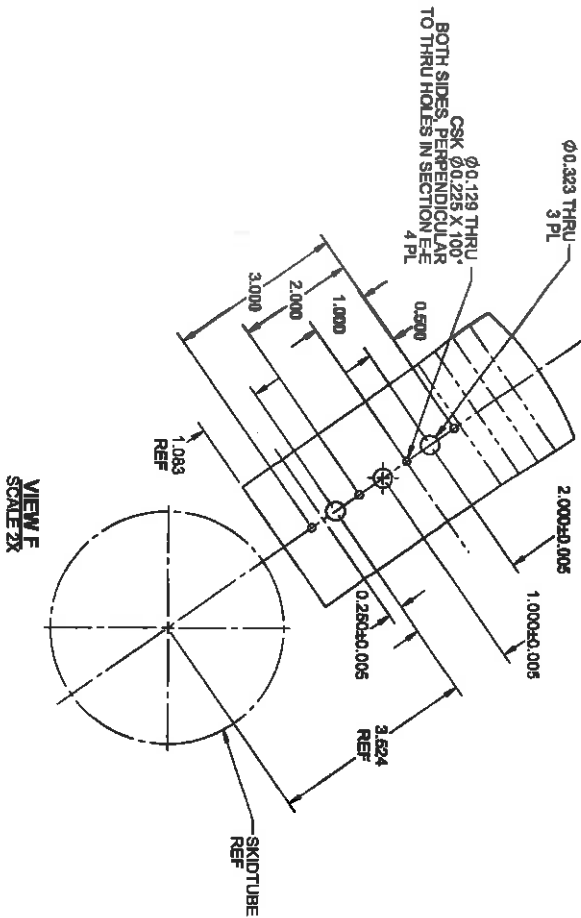
D119-796-241BND CROSS-TUBE AFT
BENDING AND DRILLING DETAIL

- NOTES:**
- 1) MATERIAL: MAKE FROM D119-796-241TRN
 - 2) FINISH: CHEMICAL CONVERSION COAT PER PART OSI 006 4.1
PRIME INSIDE AND OUTSIDE PER PART OSI 006 4.2
DO NOT APPLY PRIMER TO CUPE IN LOCATION SHOWN, MASK PRIOR TO FINISHING
 - 3) TOLERANCES: PER PART OSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 24.17 lbs
 - 8) PART IS SYMMETRICAL ABOUT CENTERLINE
 - 9) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 8.5% BASED ON OD
 - 10) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSS-TUBE PER OSI 038
 - 11) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM DEFECTS SUCH AS SCRATCHES, NICKS OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

RELEASED
2015-11-04
APPROVED

DESIGN	AP	AP	DART AEROSPACE LTD
DRAWN	AP	AP	HAWKESBURY, ONTARIO, CANADA
CHECKED	AS	AS	DRAWING NO.
MFG. APPR.	JLM	JLM	D119-796-241
APPROVED	WM	WM	REV. 1
DE APPR.	DS	DS	SHEET 1 OF 7
DATE	15.10.13	15.10.13	SCALE
			N/A

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2015-11-04

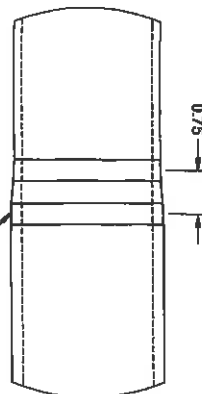
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DESIGN	AP	DART AEROSPACE USA, INC.
DRAWN	AP	RENT, WA
CHECKED	ALB	DRAWING NO.
MFG. APPR.	LM	D119-798-241
APPROVED	WM	REV. 1
DE APPR.	DS	SHEET 5 OF 7
DATE	15.10.13	TITLE
		XTUBE ASSY (AW119 MKII AFT)
		SCALE
		NTS

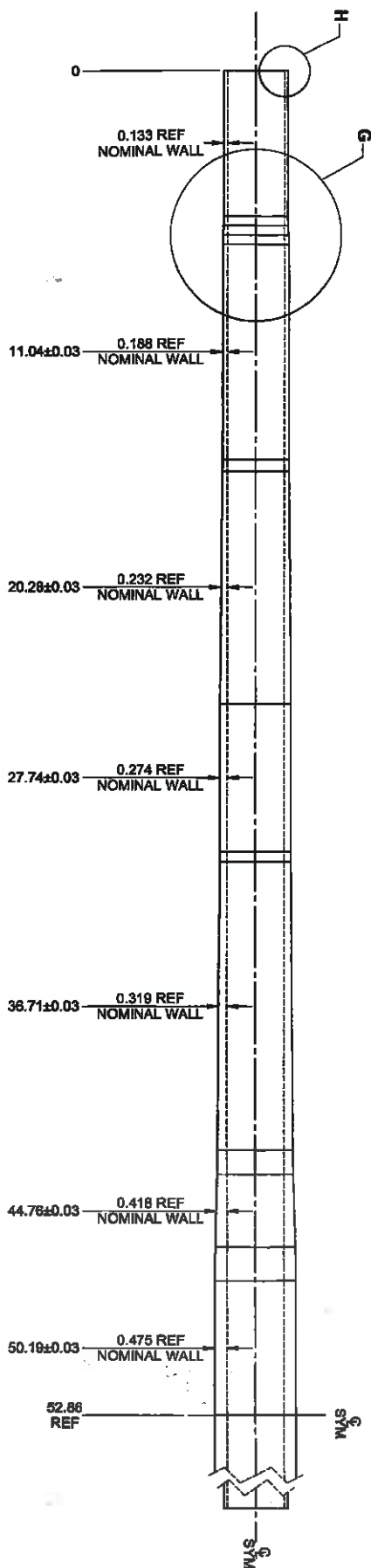
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DETAIL H
SCALE 4X



DETAIL G
SCALE 2X



D119-796-241 TRN CROSSTUBE AFT
SUPPLEMENTAL VIEW: NOMINAL WALL THICKNESS

RELEASED
2015-11-04
APPROVED

DESIGN	AP	AP	DART AEROSPACE LTD
DRAWN	AP	AP	HAWESBURY, ONTARIO, CANADA
CHECKED	ALB	ALB	DRAWING NO. D119-796-241
MFG. APPR.	JLM	JLM	REV. 1
APPROVED	WM	WM	SHEET 7 OF 7
DE APPR.	DS	DS	SCALE NTS
DATE	15.10.13	2	

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO33354

Purchase Order Date 8/19/2016

PO Print Date 8/19/2016

Page Number 4 of 4

Order From :
SKYSERVICE
6120 MIDFIELD ROAD
MISSISSAUGA, ONTARIO L5P 1B1
CANADA

VC-SKY001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905-678-5636

Ship To Contact
Ship To Phone
Ship Via: Delivered
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

9 145279 D119-796-241 8/23/2016 1.00
CROSSTUBE
Yes
8/23/2016

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

22/8/16
Sy

Line Total: \$0.00

\$0.00 \$0.00

Line Total: \$0.00

PO Total: \$0.00

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr: 2

Change Date: 8/19/2016



skyservice Work Order Traveler

Sky Service F.B.O. Inc.

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MW029206	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: 33354
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT ON 8 CROSSTUBES AS PER PO33354

3 STAINLESS STEEL FWD CROSSTUBES, ITEM ID# D350-748-103, WORK ORDER ID# 148811, 145977, 147567

2 FWD CROSSTUBES, ITEM ID# D119-796-141, WORK ORDER ID# 148313, 146638

5/16/02/12

3 AFT CROSSTUBES, ITEM ID# D119-796-241, WORK ORDER ID# 148244, 148243, 145279

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-13						AUG 19 2016	
NO CRACK FOUND							
PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923, EMU. MPO15896, DEV. MPO11715, UV LIGHT M-20142							
Description	Location	P/N	Qty	Batch	S/N Off		S/N On

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:		ACA/SCA Stamp DOT-APP 20 53-89	Date:
Name: HAFIK MELIKIAN			AUG 19 2016

